

Shenzhen Chengen Thermovision Technology Co., Ltd.

CV Series

Thermal Camera Core

User Manual V1.0



Product Model: CV Series

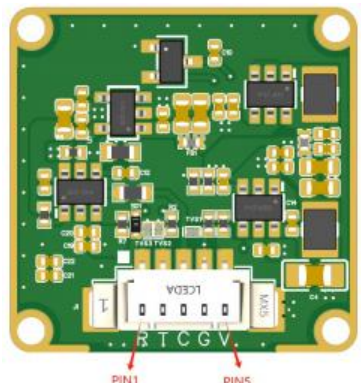
Product Overview

This product is a thermal imaging module based on an uncooled infrared focal plane detector, supporting CVBS (composite video broadcast signal) output, and can be widely used in industrial detection, security monitoring, fire search and rescue, power inspection, etc. The module captures the temperature distribution of the target object through thermal radiation and converts it into a real-time visible thermal imaging video signal, which is compatible with traditional analog display devices (such as drones, monitors, video recorders, etc.).

Technical Features

Features	Performance		
Sensor Type	Uncooled Focal Plane Array detector (VOx - Vanadium Oxide)		
resolution	256*192	384*288	640*512
NETD	<35mK (f/1.0 50Hz 300K)		
Detector Frame Rate	50Hz		
Spectral Response	8~14um		
Lens Option	Support Option: 4mm/6.8mm/9mm/13.5mm/15mm/19mm/25mm/35mm		
Output Signal	CVBS		
Video Interface	CVBS(PAL Format)		
Secondary Development	/		
Operating Temperature	-30°C ~ +60°C		
Power Input	CVBS(4.6v~18v)		
Dimension/Weight	31*21mm/44g		

Interface Definition

1.25mm-5P (1x5P Pitch: 1.25mm SMT)		Connector Definition
PIN1	UART-RX	
PIN2	UART-TX	
PIN3	CVBS	
PIN4	GND	
PIN5	4.6~18V	



Applications

- **Industrial Inspection:** Circuit board hotspot detection, equipment thermal fault warning.
- **Security Monitoring:** Nighttime no-light environment monitoring, intruder detection.
- **Firefighting and Disaster Rescue:** Fire source localization, trapped personnel rescue.
- **Power Inspection:** abnormal temperature detection of power transmission and transformation equipment.
- **Wireless Image Transmission:** Infrared gimbal applications for drones.

Communication Control

The module can be controlled through the UART serial port, supporting control functions: lid calibration, mirror flip, digital zoom, scene mode, pseudo color (white hot, black hot modes), detail enhancement, brightness, contrast, etc. For specific serial ports, see the attachment "MINI2 Series Serial Port Instruction Set_V0.5_20240111"

Installation and Usage Instructions

Hardware Connection

- Installation and Usage Instructions: Connect the module power cable to a 4.6V–18V DC power supply (ensure the power is stable).
- Use a coaxial cable to connect the module's CVBS output to the video input interface of a monitor, recorder, or wireless transmission module.
- (Optional) Connect to a host computer via the UART interface to configure parameters.

Operating Procedure

- Power On and Warm-up: After powering on, wait 1–2 minutes for the module to stabilize.

- It is normal for the module shutter to actuate multiple times during startup. Once the detector reaches a stable state, the module shutter will automatically adjust the refresh rate according to temperature thresholds (this varies for models without a shutter).

Image Adjustment

- Adjust the module lens focus to clearly view the target.
- Adjust the monitor's contrast and brightness to achieve the best visual effect.
- Use host software to select pseudo-color mode or enable temperature measurement function.

Signal Check

- If the image is blurry or missing, check the power stability and video cable connections.

Maintenance and Precautions

- Do not connect the attached cables incorrectly to avoid damaging the equipment.
- When cleaning the lens, use a dust-free cloth dipped in a small amount of alcohol to gently wipe the infrared window.
- For long-term storage, keep the device in a dry environment and it is recommended to use anti-static packaging.
- Do not expose the component directly to the sun or other high-intensity radiation sources.
- The ideal operating temperature range is -30°C to 60°C.
- For CVBS signal wired transmission, the recommended maximum distance is 50 meters; for longer distances, a video amplifier must be added.
- Do not disassemble the device. In case of malfunction, please contact our company for professional maintenance.

Structural Dimensions

